

Amendments to the Claims

1. (Currently Amended) A local timing circuit for ~~direct~~ use with transport logic in a network element, ~~the network element forms forming~~ part of a data network, the local timing circuit comprising:

a timing receiver having a timing input, a timing output, and a selection input, the timing receiver ~~operable to receive~~ receiving one or more timing signals at the timing input [and], ~~to select~~ selecting a selected timing signal, for ~~distribution and distributing the selected timing signal directly~~ to the transport logic via the timing output based on a selection signal received at the selection input;

a determination circuit receiving input signals operable to determine whether the local timing circuit is one of a master timing circuit ~~and or a~~ slave timing circuit, and based on the determination, produce the selection signal; and

a sync transmitter coupled to the timing output, the determination circuit, and a communication channel, the sync transmitter operable to receive the selected timing signal and to transmit the selected timing signal on the communication channel when the determination circuit determines that the local timing circuit is the master timing circuit.

2. (Currently Amended) The local timing circuit of claim 1, wherein the one or more timing signals include a client synchronization signal associated with client data that is to be transported on the data network.

3. (Currently Amended) The local timing circuit of claim 2, wherein when the determination circuit determines that the local timing circuit is the master timing circuit, the selection signal is generated to select the client synchronization signal associated with client data for distribution to the transport logic.

4. (Currently Amended) The local timing circuit of claim 1, wherein the timing receiver is coupled to the communication channel and the one or more timing signals include a master sync signal received on the communication channel.

5. (Currently Amended) The local timing circuit of claim 4, wherein when the determination circuit determines that the local timing circuit is the slave timing circuit, the selection signal is generated to select the master sync signal for distribution to the transport logic.

6. (Currently Amended) The local timing circuit of claim 1, wherein the one

or more timing signals includes an external sync signal ~~provide~~ provided at the network element.

7. (Currently Amended) The local timing circuit of claim 1, wherein the determination circuit is coupled to a message bus and is operable to receive at least one message over the message ~~but bus~~ to determine whether the local timing circuit is one of the master timing circuit ~~and or~~ the slave timing circuit.

8. (Currently Amended) The local timing circuit of claim 1, wherein the determination circuit is operable to receive at least one local parameter to determine whether the local timing circuit is one of the master timing circuit ~~and or~~ the slave timing circuit.

9. (Currently Amended) A ~~decentralized~~ synchronization system for use in a network element that forms part of a data network, the network element ~~includes~~ ~~including~~ transport logic to transport one or more data streams in the data network, wherein each of the one or more data streams has an associated synchronization signal, and wherein the transport logic comprises two or more local circuit assemblies that are ~~directly~~ coupled together via a communication channel, the synchronization system comprising:

two or more local determination circuits located on the two or more local

circuit assemblies which are directly coupled together via a communication channel, one local determination circuit per local circuit assembly, wherein each local determination circuit includes logic to determine whether its respective circuit assembly is one of a master circuit assembly ~~and/or~~ a slave circuit assembly; and

two or more local timing circuits coupled to the two or more local determination circuits, one local timing circuit per local determination circuit, wherein each local timing circuit includes logic to receive a plurality of synchronization signals and logic to selectively transmit a selected synchronization signal of the plurality of synchronization signals over the communication channel.

10. (Original) The synchronization system of claim 9, wherein the plurality of synchronization signals include the associated synchronization signals associated with the data streams to be transported in the data network.

11. (Currently Amended) The synchronization system of claim 10, wherein when a selected local determination circuit determines that its respective local circuit assembly is the master circuit assembly, the local timing circuit coupled to the selected local determination circuit selects one of the associated synchronization signals as the selected synchronization signal and transmits

the selected synchronization signal as a master sync signal over the communication channel.

12. (Original) The synchronization system of claim 9, wherein the plurality of synchronization signals include a master sync signal received over the communication channel.

13. (Currently Amended) The synchronization system of claim 12, wherein when a selected local determination circuit determines that its respective local circuit assembly is the slave circuit assembly, the local timing circuit coupled to the selected determination circuit selects the master sync signal received over the communication channel and uses the master sync signal to synchronize its respective circuit assembly.

14. (Currently Amended) The synchronization system of claim 9, wherein the two or more local determination circuits are coupled to a message bus and each local determination circuit is operable to receive at least one message over the message bus to determine whether its respective circuit assembly is one of the master circuit assembly ~~and~~ or the slave circuit assembly.

15. (Currently Amended) The synchronization system of claim 9, wherein

each of the two or more local determination circuit is operable to receive at least one local parameter to determine whether its respective circuit assembly is one of the master circuit assembly ~~and or~~ the slave circuit assembly.

16. (Currently Amended) A synchronization system for use with an ~~ADM add/drop multiplexer~~ card set in a network element that forms part of an optical network, the ~~ADM add/drop multiplexer~~ card set comprising first and second circuit cards operable to transport data via the optical network, wherein the data has an associated synchronization signal, the synchronization system comprising:

a communication channel directly coupling a card in said add/drop multiplexer card set to another card in said add/drop multiplexer card set;

a determination circuit operable to determine which of the first and second circuit cards is a master circuit card and which is a slave circuit card;

a first timing circuit located on the master circuit card and coupled to the communication channel, the first timing circuit includes logic to receive the associated synchronization signal and to synchronize the master circuit card to the associated synchronization signal, the first timing circuit further including logic to transmit the associated synchronization signal over the communication channel; and

a second timing circuit located on the slave circuit card and coupled to

the communication channel, the second timing circuit having logic to receive the associated synchronization signal from the communication channel and to synchronize the slave circuit card to the associated synchronization signal.

17. (Original) The synchronization system of claim 16, wherein the determination circuit includes logic to determine which of the first and second circuit cards is the master circuit card and which is the slave circuit card by using a card position indicator associated with each card.

18. (Original) The synchronization system of claim 16, wherein the determination circuit comprises a first determination circuit coupled to the first timing circuit and a second determination circuit coupled to the second timing circuit, and wherein the first and second determination circuits are coupled to a message bus.

19. (Currently Amended) The synchronization system of claim 18, wherein the first and second determination circuits include logic to send at least one message over the message bus but to determine which of the first and second circuit cards is the master circuit card and which is the slave circuit card.

20. (Currently Amended) A method for synchronizing transport logic in a

network element that forms part of a data network, the transport logic is used to transport one or more data streams in the data network, wherein each of the one or more data streams has an associated synchronization signal, and wherein the transport logic comprises two or more local circuit assemblies that are directly coupled together via a communication channel, the method comprising steps of:

determining that a selected local circuit assembly among said two or more local circuit assemblies which are directly coupled together via a communication channel is a master circuit assembly and that remaining circuit assemblies are slave circuit assemblies;

receiving at least one associated synchronization signal at the master circuit assembly;

synchronizing the master circuit assembly to the at least one associated synchronization signal;

distributing the at least one associated synchronization signal from the master circuit assembly directly to the slave circuit assemblies via the communication channel; and

synchronizing the slave circuit assemblies to the at least one associated synchronization signal.

21. (Currently Amended) The method of claim 20, wherein the step of

determining comprises a step of determining that the selected local circuit assembly is a master circuit assembly and that the remaining circuit assemblies are slave circuit assemblies using a position indicator associated with the respective circuit assembly.

22. (Currently Amended) The method of claim 20, wherein the communication channel includes a message bus and the step of determining comprises a step of determining that the selected local circuit assembly is a master circuit assembly and that the remaining circuit assemblies are slave circuit assemblies using one or more messages transmitted over the message bus.

23. (Currently Amended) The method of claim 20, wherein the step of determining comprises a step of determining that the selected local circuit assembly is a master circuit assembly and that the remaining circuit assemblies are slave circuit assemblies using at least one stored parameter.

24. (Original) The method of claim 20, wherein the transport logic is first transport logic and the one or more data streams are first client data streams, and wherein the network element includes second transport logic, the second transport logic is used to transport one or more second client data streams in

the data network, wherein each of the one or more second client data streams has an associated synchronization signal, and wherein the second transport logic comprises two or more circuit assemblies that are coupled together via a second communication channel, the method comprising steps of determining that a selected circuit assembly of the second transport logic is a second master circuit assembly and that remaining circuit assemblies of the second transport logic are second slave circuit assemblies;

receiving at least one associated synchronization signal associated with the second client data streams at the second master circuit assembly;

synchronizing the second master circuit assembly to the at least one associated synchronization signal associated with the second client data streams;

distributing the at least one associated synchronization signal associated with the second client data streams from the second master circuit assembly to the second slave circuit assemblies via the second communication channel; and

synchronizing the second slave circuit assemblies to the at least one associated synchronization signal associated with the second client data streams.